

Department of Pediatrics Research Report

May 2023



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Child Health Research Trainee Spotlight

In this issue we highlight the winners of the 2023 Child Health Research Trainee Day

Ashley Burghall

1st Place Medical Poster Category

Ashley Burghall is a fourth-year PharmD student at the College of Pharmacy and Nutrition in Saskatoon. Her current research interests include solid-organ transplantation (SOT) and educational interventions for SOT patients and their families. She placed first in the Medical Poster Category at the 2023 Child Health Research Trainee Day for her project titled, “A Scoping review of pediatric transplant education”.

Ashley and her team wanted to identify through a scoping review which interventions are effective at educating pediatric patients and families throughout the transplant continuum and in what circumstances education is lacking. The objective of this study was to perform a scoping review that would a) describe the types, effects, and outcomes of patient-focused educational interventions before and after pediatric transplant and b) understanding the educational experiences of patients and caregivers. Caregivers and pediatric patients reported feeling less stressed



with the transplant experience when they received adequate information, and frequently requested more education throughout the transplant process. However, high-quality studies and/or quality improvement initiatives focusing on pediatric education are limited. In many countries, patient education is a requirement for transplant centers to receive program accreditation indicating its fundamental importance to optimal patient care. Future priorities should include clarifying patient caregiver-prioritized outcomes, developing educational initiatives to meet the diverse needs of patients and caregivers throughout the transplant continuum and conducting high-quality pediatric

Outcomes that frequently showed sig. improvement:

- Knowledge improvement: n=8/9
- Satisfaction with the intervention: n=7/7

Outcomes that rarely showed sig. improvement:

- Medication adherence: n=2/6
- Behaviour change: n=1/3
- Coping: n=0/3

transplant research to assess these outcomes.

Funding for the study was provided by the Jim Pattison Children’s Hospital Foundation. Ashley would like to thank Dr. Michelle Ruhl, Nicola Rosassen, Brianna Groot, Dr. Kayla Flood, Dr. Keefe Davis, Natasha Minakasi, Jenny Wichart, and her supervisor Dr. Holly Mansell. The team would also like to acknowledge the support of the Canadian Donation and Transplantation Research Program, and Janis Kung from the University of Alberta for her assistance with the search terms.

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Thanks to Dr. Mark Inman (Pictured handing out certificates to trainees and Dr. Alan Rosenberg for moderating the 2023 Child Health Research Trainee Day

Nahin Shakurun

1st Place Graduate Poster Category

Nahin Shakurun is an MSc candidate in Community Health and Epidemiology at USask. Prior to her pursuing an MSc she completed her M.B.B.S. (Bachelor of Medicine and Surgery). Her current research interest is community based approaches, health determinants and mental health. The overarching research questions of her health research project are: 1. Is obesity associated with mood disorder in Canadian children and youth? 2. Does multimorbidity mediate the relationship between obesity and mood disorder? Her team used data from respondents aged 12 to 24 (n=15,638) who participated in the 2017-18 Canadian Community Health Survey (CCHS).

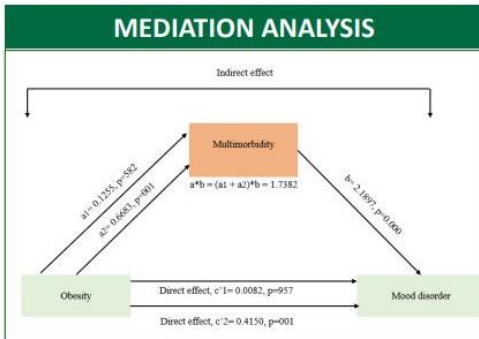


Figure 2: Mediation effect of multimorbidity in the relationship between obesity and mood disorder

- After mediation analysis, we found that obesity significantly affected mood disorder both in direct and indirect pathways (Figure 2).
- The ratio of indirect effect to total effect (RIT) was calculated, 80% of the total effect of obesity on mood disorder was mediated by multimorbidity.
- Further exploration was done after removing anxiety as a component of multimorbidity. But after that multimorbidity showed no significant mediational effect.

The dichotomous dependent variable, mood disorder, was assessed using a self-reported question “Do you have a mood disorder such as depression, bipolar disorder, mania or dysthymia?” Obesity was determined from self-reported height and weight measurements and categorized as underweight or normal weight, overweight and obese. The multimorbidity variable was derived from 21 chronic conditions and dichotomized (Less than two chronic conditions and two or more chronic conditions). Among the study participants, 41% were between 20-24 years, and 22% were between 12-14 years. The overall prevalence of mood disorder was 7.67%, with higher prevalence associated with female sex, older age, Indigenous identity and being a secondary school graduate without a post-secondary education. In multivariable analysis, mood disorder was significantly higher among obese (AOR= 1.51; 95%CI:1.17-1.95) and among those with multimorbidity (AOR=8.93; 95%CI: 6.30-12.65). Multimorbidity also emerged as an important mediator in the relationship between obesity and mood disorder. The findings from this study reveal that obesity linked with multimorbidity is associated with mood disorder. Future research is required to investigate this complex relationship.

Nahin would like to acknowledge her Project Supervisor, Dr. Punam Pahwa and Dr. Bonnie Janzen and her co-author Shirmin Bintay Kader.

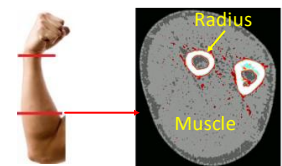
Yuwen Zheng

1st Place Oral Presentation Category

Yuwen completed her Bachelor and Master degrees in Kinesiology at USask. She is currently a PhD candidate in the College of Kin. Her current focus is looking at the musculoskeletal health in children with type 1 diabetes (T1D). Individuals, including children with T1D have higher fracture risk and this may relate to deficits in bone and muscle development during growth. Her thesis is part of the Saskatchewan Bone Strength Development Study (BSDS). BSDS will address the following research questions: 1) Does bone and muscle development differ between children with DM1 and typically developing children? 2) What factors (e.g., related to T1D, lifestyle) are associated with musculoskeletal development in children with T1D?

Measurement

- Shaft site bone and muscle: radius (65% ulna) and tibia shaft (66% tibia) from the dominant side with pQCT ²
- Physical activity (PA) score: questionnaire for children ³
- Dietary protein, Ca, VitD intake: Food Frequency Questionnaire ⁴



1. Bunyamin et al., JBMR, 2019; 2. Kawallak et al., Osteoporos Int, 2017; 2. Duff et al., JMNI, 2017; 3. Kowalski et al., Pediatr Exerc Sci, 2017; 4. Boucher, Public Health Nutr., 2006

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Yuwen’s thesis research will assess musculoskeletal health in children with type 1 diabetes using advanced imaging tools. She presented on the following aim: to assess differences in imaged bone and muscle characteristics, between children with T1D and typically developing children (TDC). They found that at the distal radius, children with T1D had 5% lower trabecular number while cortical and tissue mineral density, cortical area, thickness and bone stiffness were 4-24% higher. At the distal tibia, children with T1D had 6% lower trabecular thickness while cortical density was 7% higher at the tibia shaft. Muscle density was 3% higher in children with T1D. The conclusion was children with T1D had deficits in trabecular bone micro-architecture at the distal radius and tibia, while the distal radius cortex had higher area, density and thickness. Prospective, longitudinal data characterizing bone development in children with T1D vs. TDC, along with endocrine and lifestyle factors contributing to bone development, are warranted to clarify these seemingly contradictory cross-sectional observations.



Yuwen would like to acknowledge Drs. Saija Kontulainen and Munier Nour who are the co-leaders of BSDS. The study team includes several researchers and trainees. Her mentoring committee includes Drs., Kontulainen (supervisor), Nour, Johnston and Lanovaz.

This research is funded by CIHR, SHRF and College of Medicine (CoMRad) and the Saskatchewan center of patient-oriented research (SCPOR)



Dr. Patrick Seitzinger

Best Pediatric Resident Presentation Overall

Dr. Patrick Seitzinger is a pediatric resident at USask. Prior to his residency in Saskatchewan he completed undergraduate medical training in the Northern Medical Program of UBC in Prince George, British Columbia. His interest in research directly relates to its applicability to his clinical work. He finds it helpful to identify and implement practice changes and hopes to incorporate this into his career. The study “Reducing Excessive Variability in Infant Sepsis Evaluation (REVISE II)” that Patrick presented is an example of quality improvement. The goal of the study was to improve and standardize the care of febrile infants in centre as well as contribute to the standardization of care across North America.

The purpose of this project is to improve evidence-based evaluation and management of full-term, well-appearing infants 8 to 60 days old with a temperature of $\geq 38^{\circ}\text{C}$ and an emergency department visit or hospitalization. This study is both retrospective, looking at cases that fit the criteria from the past 12 months, and prospective, gathering information on how practices may be changing at our centre. The project provided information and medical education to providers through webinars, pathways, a literature bundle, and a toolkit for parent education and engagement.

KEY TAKEAWAYS

As a North American collaborative...
We made steady improvement in:

- ▶ Appropriate CSF
- ▶ Appropriate disposition from the ED
- ▶ Appropriate prescription of antibiotics

As an institution, we at JPCH:
Excellence in areas of:

- ▶ Antimicrobial stewardship
- ▶ Minimal bounce backs to ED or readmissions to hospital

Areas where we can continue to focus to improve care:

- ▶ Timing of discharge (moving LOS from 48 hours to 36 hours with negative cultures)

Patrick would like to acknowledge his supervisors Dr. Ron Siemens and Dr. Aiysha Kurji and the REVISE 2 Group

Congrats to Dr. Krista Baerg, Department of Pediatric Faculty, being awarded a 2022-2023 Jim Pattison Children's Hospital Foundation Grant!

Functional Impact of Chronic Pain at Transition from Pediatric Complex Pain. Care: A Scoping Review and Post-Transition Cross-sectional Survey

Chronic pain is a pain that lasts longer than three months. It affects approximately 1-3 million Canadian youth. One in five youth live with chronic pain and often experience difficulties in their daily activities such as participation in school, family and physical activities. Half of these youth continue to experience chronic pain in their adulthood but may have difficulty transitioning from pediatric to adult services. The Interdisciplinary Pediatric Complex Pain Clinic team in Saskatchewan supports youth with chronic pain affecting their participation in home, school and peer activities. The team supports youth and their families as they plan for discharge from pediatric pain services. After discharge, there is no follow-up to know if the transition to adult services was successful. There can be many reasons behind unsuccessful transitions such as long wait times or difficulty managing pain. Furthermore, Canadian youth have identified educational attainment and vocational training as important factors that require further research. It is necessary to improve understanding of impact of chronic pain in early adulthood and challenges youth with chronic pain experience when accessing adult pain care and vocational training so multidisciplinary pain clinic team members can improve anticipatory guidance and support young adults to live a quality life. Therefore, in this study we will understand the barriers to access care and strategies to ensure successful transition.



Dr. Baerg (PI), Dr. Susan Tupper (Co-I), Janet Gunderson (PLE) and Nicole Cooke (PLE) were awarded \$85, 916.58 over two years.



Congratulations to **Dr. Roona Sinha** for being honoured with the [Faculty Leadership Excellence Award \(Saskatoon\)](#).

Dr. Sinha was recognized for her leadership in developing the provincial pediatric hematology/oncology program, physician recruitment, and her inspirational ability to empower her team.



New Season Alert!

Department of Pediatrics' Dr. Rupeena Purewal hosts **The Canadian Breakpoint**. A Canadian Infectious Diseases Podcast by Canadian Infectious Diseases Physicians. Check out the episodes [here!](#)



Warmest Gratitude to our Interim Pediatric Department Head, **Dr. Athena McConnell!**

Dr. McConnell has been in this role from January 2020. She has been an exceptional leader carrying the department through a unprecedented pandemic, recruitment of new faculty and staff, all while been a steadfast adviser for all. We thank her for her consistent service to this department and look forward to seeing what great things she has up next!





2023 Child Health Research Trainee Day Standings

Poster Presentations

Category	Name	Title	Authors	Position
Medical Judges: Dr. Tim Bradley, Dr. Munier Nour	Ashley Burghall (Undergraduate Student, Pharmacy and Nutrition)	A Scoping Review of Pediatric Transplant Education	Ashley Burghall, Michelle Ruhl, Nicola Rosaasen, Brianna Groot, Kayla Flood, Keefe Davis, Natasha Minakasi, Jenny Wichart, Holly Mansell	1 st
	Emilee Anderson (PGY3, Pediatrics)	Assessing Caregiver Knowledge of CPS Guidelines for the Introduction of Allergenic Foods	Emilee Anderson, Andrea Fong, Sanjida Newaz	2 nd
Graduate Judges: Dr. Oluwafemi Oluwole, Dr. Josh Lawson	Nahin Shakurun (MSc Candidate, Medicine)	Mood Disorder and Obesity in Canadian Children and Young People: Evidence from Canadian Community Health Survey 2017-2018	Nahin Shakurun, Shirmin Bintay Kader, Bonnie Janzen, Punam Pahwa	1 st
	Craig Eling (PhD Candidate, Health Sciences)	Discovering the Facilitators and Barriers to Digital Health Literacy in Childhood Rheumatic Diseases.	Craig Eling, Donna Goodridge, Roona Sinha, Alan Rosenberg, Jennifer Stinson, Jasmin Bhawra, Maryam Mehtar, and Shelley Kirchuk	2 nd
Oral Presentations				
Judges: Dr. Keefe Davis, Dr. Krista Baerg	Yuwen Zheng (PhD Candidate, Kinesiology)	Bone deficits pertain to the trabecular bone only in children with type 1 diabetes: Sex and maturity case-control comparison	Yuwen Zheng, James Johnston, Munier Nour, Saija Kontulainen	1 st
	Natasha Gattey (PGY4, Psychiatry)	Accelerated Resolution Therapy to Treat Children and Adolescents with Psychiatric Symptoms	Natasha Gattey, Kristen Edwards, Mariam Alaverdashvili, Thuy Le, Declan Quinn	2 nd
Top Pediatric Resident Research Presentation Overall				
	Patrick Seitzinger (PGY2)	Reducing Excessive Variability in Infant Sepsis Evaluation (REVISE II)	Patrick Seitzinger, Ron Siemens, Aiysha Kurji as part of the REVISE 2 Group Collaborative	1 st

2022-2023 SHRF Innovation Grant Awardees from Department of Pediatrics



Dr. Susan Petryk (Co-PI) and Dr. Jill Bally (Co-PI) were awarded the Innovation Grant in partnership with Mental Health Research Canada for the study titled: *The Virtual Specialist and the Travelling Nurse Practitioner: A Novel Consultation Model for Children and their Families to Improve Access to Developmental Pediatric and Child Mental Healthcare* in the amount of \$49,986.

Summary: The aim of this project is to develop and test a model of care which brings a specialist in Developmental Pediatrics and mental health right to the home communities of children and families across Saskatchewan by leveraging virtual care. Utilizing the in-person resources of a travelling (or ultimately local) Nurse Practitioner, the research team feels they can demonstrate a cost-effective way to reduce wait-times, virtually bring the specialist into communities outside of Saskatchewan's major centres, increase the capacity of the specialist, maintain quality of care and increase patient satisfaction. This model has the potential to expand to other specialties.

Dr. Darryl Adamko (Co-PI) and Dr. Anas El-Aneed, (Co-PI) were awarded the Innovation Grant in partnership with Lung Saskatchewan for the study titled: *Improve Diagnosis of Lung Diseases Using Urine Tests* in the amount of \$50,000.

Summary: This project aims to evaluate a novel test that uses a combination of a urine sample and a mass spectrometry in the identification of and distinction between COPD and asthma. By studying populations with varying airways diseases, researchers aim, for the long term, to develop a non-invasive test that can improve doctor's office and ER diagnoses and adjust the amount of medication administered to these individuals.



Congratulations to **Dr. Mahli Brindamour** for being honoured with the Canadian Paediatric Society - Early Career Paediatrician Award.

This award celebrates the leadership qualities of an early career paediatrician and recognizes their exceptional contribution and commitment to advocating for child and youth health at the regional level. Read more here: <https://cps.ca/en/awards-prix/early-career-paediatrician-award>

Welcome New Department Head of Pediatrics, Dr. Patrick Brophy!

Dr. Patrick Brophy is the William H. Eilinger Professor and Department Chair of Pediatrics at the University of Rochester Medical Center/Physician-in-Chief Golisano Children's Hospital. Dr. Patrick Brophy is a highly accomplished clinician and researcher in Pediatrics, specializing in neonatal and genetic renal anomalies, Acute Kidney Injury, and critical care nephrology. He has held various prestigious leadership positions in medical organizations, including past President of the American Society of Pediatric Nephrology and immediate past Program Chair for the Pediatric Academic Societies. He was awarded a master's in healthcare delivery sciences from the Tuck Business school at Dartmouth in 2013. He has published over 150 peer-reviewed papers and received grants from NIH, USDA, and other foundations for his research. His work has significantly impacted patient care and made seminal discoveries in the basic science mechanisms of renal development.



Publication

Check out the [Department of Pediatrics new Google Scholar Page](#). Here you can find publications from all faculty and trainees from the department



	<h1>Pediatrics In the News</h1>	
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SHRF Focus Area



SHRF's Child and Youth Focus Area

If you missed the first Align application deadline, the next deadline is July 20, 2023. SHRF's Align Grant is for researchers that are working with community, non-profit or government collaborators to develop relevant research questions – funding can support you as you build a team, hire a trainee to do some preliminary research, further develop a research question, etc – a perfect opportunity to position your team for your next peer-review grant application. You can receive up to \$10,000. Full Details at <https://www.shrf.ca/align>

SHRF's Mobilize Grant is for anyone with an interest in promoting health knowledge. This grant provides up to \$10,000 for projects that are sharing health knowledge with non-academic audiences in creative ways. Projects do not need to be led by a researcher, as long as the work is grounded in evidence-based knowledge and the individual has a position with a post-secondary institution or a CRA-registered charity. The deadline is July 11, 2023. Full Details at <https://www.shrf.ca/mobilize>

The Children's Health Research Trust Fund (CHRTF) was established in 1983 to help raise funds to support child health research at the University of Saskatchewan. As all donated funds are endowed, the CHRTF has continued to grow to become an important part in helping advance research in the Department of Pediatrics. For further information about the CHRTF and to donate: <https://donate.usask.ca/online/chrtf.php>



Our Partners:

The Jim Pattison Children's Hospital has historically provided strong support for child health research in Saskatchewan. The recent \$50 million donation from Jim Pattison allows for a steady stream of revenue to help meet research and programming needs for generations to come. Groundbreaking opportunities for pediatric researchers in Saskatchewan are on the horizon!



Contact us

For more information about The Department of Pediatrics Research, SPRING, or to contribute content to the Department of Pediatrics Research Report, please contact: Tova Dybvig Department of Pediatrics Email: Tova.dybvig@usask.ca